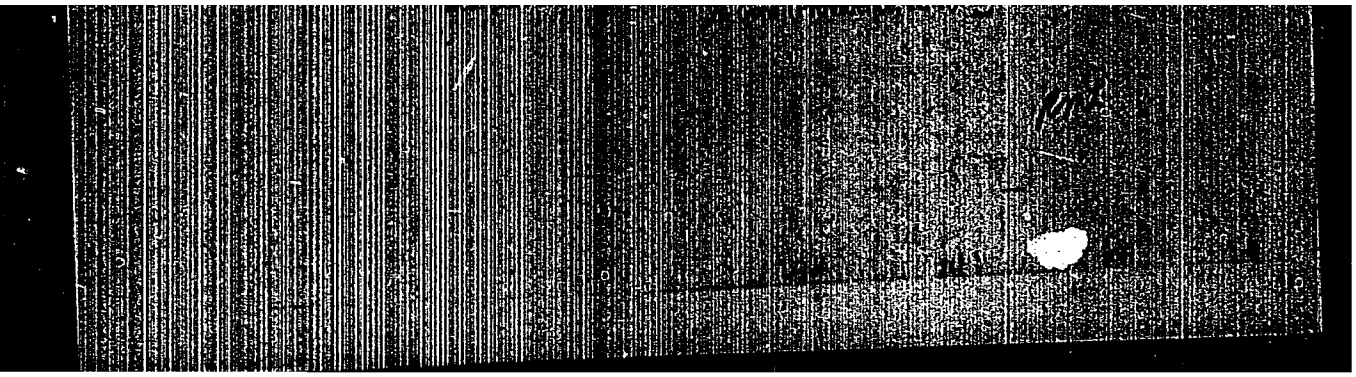

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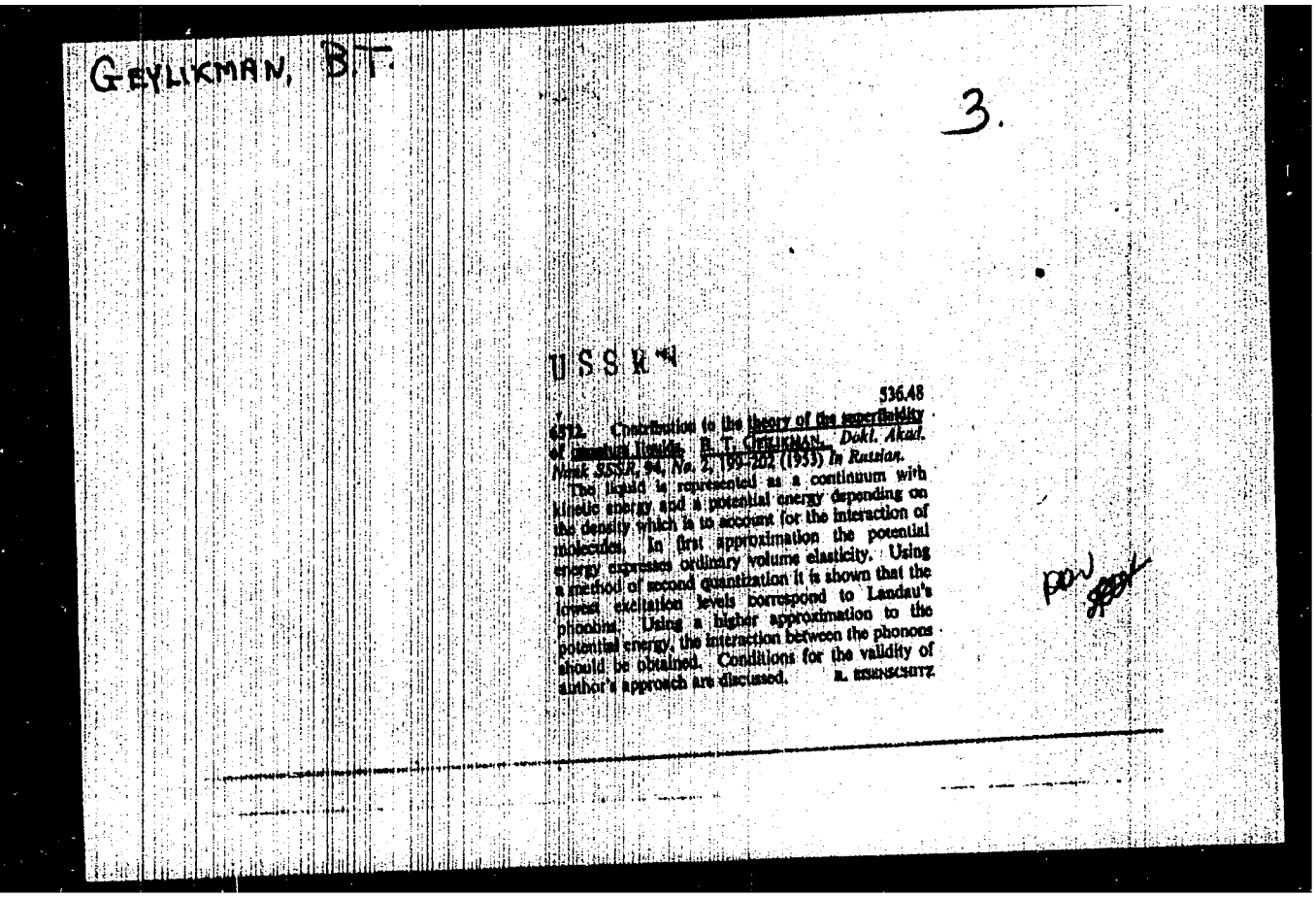


GEYLIKMAN, B.T.

3.

USSR

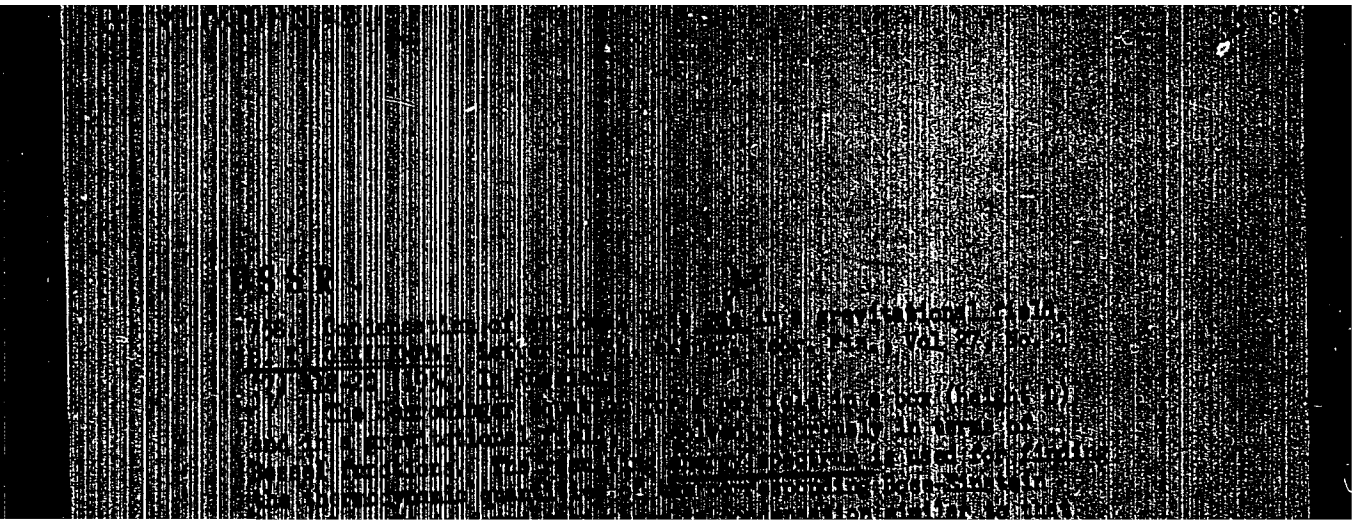
536.48

4572. Contribution to the theory of the superfluidity of quantum liquids. B. T. GEYLIKMAN. *Dokl. Akad. Nauk SSSR*, 94, No. 2, 193–202 (1953) *In Russian.*

The liquid is represented as a continuum with kinetic energy and a potential energy depending on the density which is to account for the interaction of molecules. In first approximation the potential energy expresses ordinary volume elasticity. Using a method of second quantization it is shown that the lowest excitation levels correspond to Landau's phonons. Using a higher approximation to the potential energy, the interaction between the phonons should be obtained. Conditions for the validity of author's approach are discussed. R. RUNNSCHUTZ

GEYLIKMAN, B.T.; GUROV, K.P., redaktor; TUMARKINA, N.A., tekhnicheskiy redaktor.

[Statistical theory of phase transformations] Statisticheskaia teoriia fazovykh prevrashchenii. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1954. 119 p. (MLRA 7:12)
(Thermodynamics) (Statistical mechanics)



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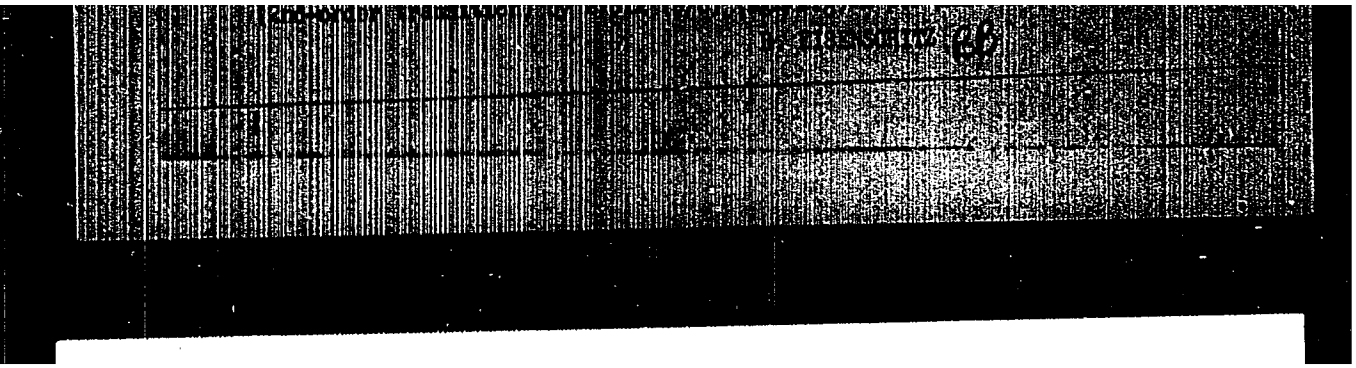

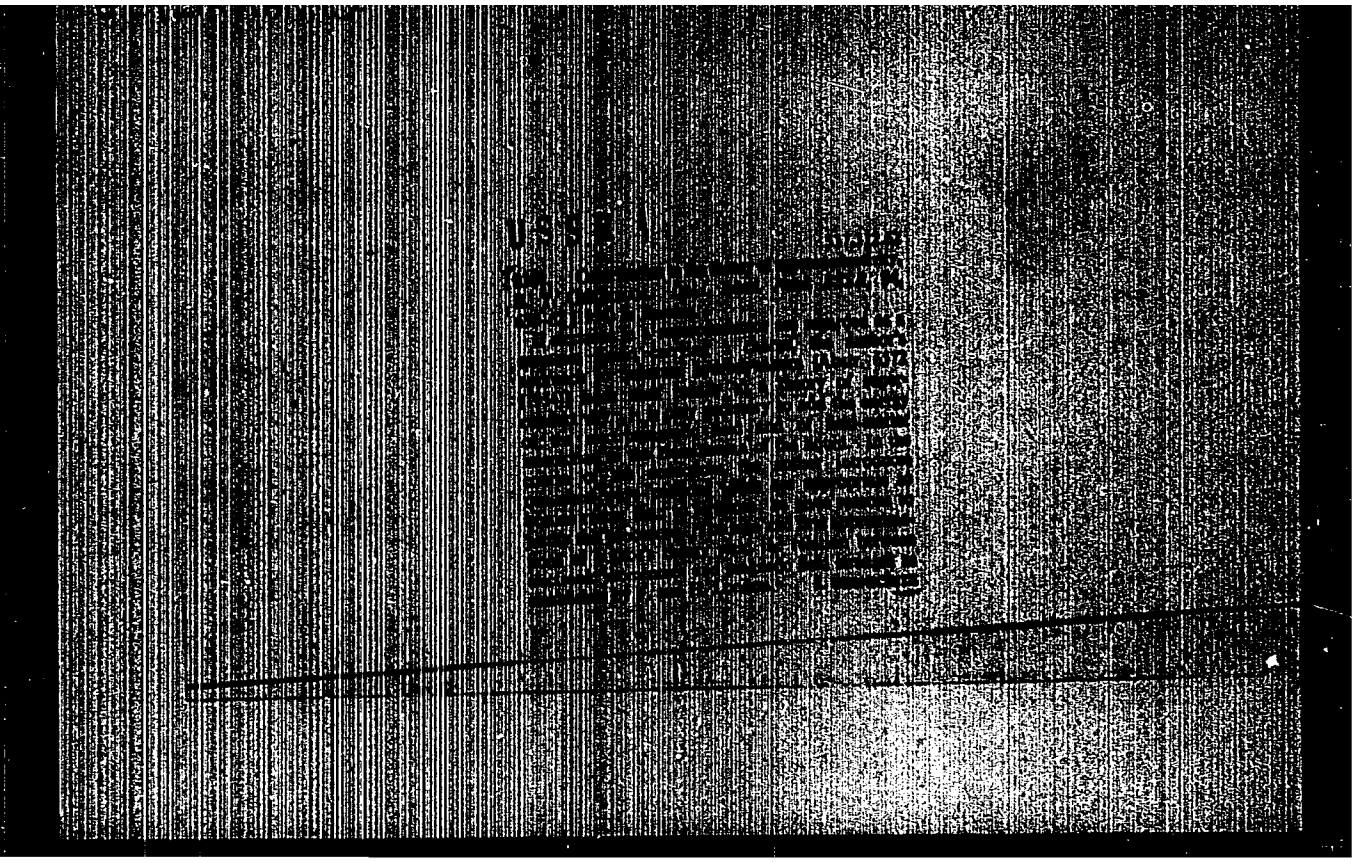

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000515010009-0"

GRYLIKMAN, B.T.

[Some problems of nuclear fission theory] Nekotorye voprosy teorii deleniia iadra. Moskva, 1955. 11 p. (MIRA 14:7)

(Nuclear fission)

: : Geylikman, B.T.

B-6

USSR/Theoretical Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10931

Author : Geylikman, B.T.

Inst : Moscow Pedagogical Institute.

Title : Theory of Strong Coupling for Meson Fields. I.

Orig Pub : Zh. eksperim. i teor. fiziki, 1955, 29, No 4, 417-429

Abstract : A study is made of the state of a spinless charged meson field, interacting with an extended infinitely heavy nucleus. The solution of the Schroedinger equation for the system is obtained by expanding in a series in powers of the reciprocal of the interaction constant $g^2/\hbar c >> 1$. The scheme for the solution is illustrated by an analogy with the adiabatic theory for molecules. By way of two possible methods, the following is proposed: in the zero approximation one neglects the kinetic energy of the meson

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field, since it is proportional to $(g^2/\hbar c)^0$ and consequently is small compared with the potential of the field and the energy of interaction, which is proportional to $g^2/\hbar c$. With this, the meson field Φ_α is split up into the classical and operator portions: $\Phi_\alpha = \varphi^0_{\alpha\lambda} + \hat{\varphi} + \hat{q}_\alpha$.

$[(\hat{\varphi}^2_\alpha)_{av.}]^{1/2} \ll \varphi^0_{\alpha\lambda}$.

The unperturbed Hamiltonian H^0 is an operator only relative to the variable $\underline{s}$ of the isotopic and ordinary spins of the nucleus. The solution $H_0 \varphi^0_\lambda = E^0_\lambda \psi^0_\lambda$ gives a system of nucleon eigenfunctions ψ^0_α and eigenvalues E^0_λ of the operator H^0, which depend on the field φ^0 as a parameter. It is shown that $\varphi^0_{\alpha\lambda}$ for each state ψ^0_λ should be determined from the condition of the minimum $\partial E^0_\lambda / \partial q_{\lambda\alpha}$, which leads to an equation for $\varphi^0_{\alpha\lambda}$;

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USSR/Theoretical Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10931

$(\Delta - \varkappa^2)\varphi^0_{\alpha\lambda} = -(g/c)\sqrt{4\pi}\,|G_\alpha(\lambda,\lambda_1$

where $|\vartheta_\alpha|_{\lambda\lambda} = (\psi^0_\lambda, \vartheta_\alpha \ldots$

For each value of the field $\varphi^0_{\alpha\lambda}$ so obtained, one finds then from the equation $H_\lambda \ldots = E^0_\lambda \ldots$ a system of functions and the energy spectrum of the nucleon ($\psi^0_{\lambda\lambda} \equiv \psi^0_\lambda$). The lowest term in each group is $E^0_{\lambda\lambda}$. In the case of a symmetrical field, the levels $E^0_{\lambda\lambda}$ for various λ turn out to be the same. Thus, for a pseudo-scalar charged field one obtains four systems of levels $E^0_{\lambda\lambda}$ and functions $\ldots$. The total J-function of the system is sought near the state $\ldots$ in the form of an expansion $\psi_\lambda = \sum \ldots$

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USSR/Theoretical Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10931

in terms of the spin nucleon functions for values of the field coordinates $q_{n\sigma}^{0}$ (the level E_{λ}^{0} for each given H_{λ}^{0} is assumed to be non-degenerate). For the determination of $\chi_{\lambda n}(q_{n\sigma})$ one considers a series expansion in powers of g [i.e., $(e^2/\hbar c)^{-1}$]:

$$\chi_{\lambda n} = \chi_{\lambda}^{0}\delta_{\lambda n} + \chi_{\lambda n}^{1} + \ldots$$

The perturbation theory developed in this manner turns out to be close in form to that used in the theory of molecules. The second approximation formulas are given. Thus, it is shown that in zero approximation ($\sim g^2$) one obtains the self-energy of the nucleon (and the energy of interaction of the nucleons -- for a system of nucleons), in the first approximation ($\sim g^0$) one obtains the quantized meson field, i.e., the true mesons that interact with the nucleon, and in the second approximation ($\sim g^{-2}$) one obtains

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Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10931

the anharmonic nature of the field of the true meson (and corrections to the self-energy of the nucleon).

The assumptions made previously $\chi^{(1)}_{\lambda m} \ll \chi^{0}_{\lambda}$, $H^{(1)} \ll H^{(0)}$ are satisfied in the absence of real mesons for a scalar field at $g^2/\hbar c \gg 1$ and for the pseudo-scalar field at $g^2/\hbar c \gg \chi^2 a^2$ (where a is the radius of the nucleon). In the presence of mesons in states with quantum numbers k_ρ, it is necessary to satisfy the additional conditions

$$\sum n_{k_\rho} \hbar\omega_{k_\rho} \ll g^2/a \quad \text{and} \quad \sum n_{k_\rho} \ll g^2/\chi^2 a^2$$

for the scalar and pseudo-scalar fields respectively. The theory is generalized to include the case of a system of nucleons.

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Geylikman, B.G.

USSR/Theoretical Physics B-6

Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10932

Author : Geylikman, B.G.
Inst :

Title : On the Theory of Strong Coupling for Meson Fields. II

Orig Pub : Zh. eksperim. i teor. fiziki, 1955, 29, No 4, 430-438

Abstract : The theory of strong coupling developed in the preceding work (Abstract 10931) is used to consider the neutral pseudo-scalar, charged-scalar, and charged pseudo-scalar fields, which interact with one nucleon. In all cases the author finds the energy spectrum and the function of the zero approximation. For the nucleon interacting with a symmetrical pseudo-scalar field, the following magnetic moment is found

$$M_z = \mp [(g^2 a/\hbar c)e/x^2 a - e\hbar/2mc],$$

where $a \sim 1$, and a is the "radius" of the nucleon,

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Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 10932

whereas for the proton and neutron, as can be seen, the magnetic moments differ only in sign. Also derived are the ψ-functions of the zero approximation and the interaction energy between two nucleons in the case of a neutral pseudo-scalar and symmetrical scalar field. For the same fields, the author investigates the first approximation in the case of one nucleon. The author also determines the wave functions of the mesons and the scattering cross section for the scattering of mesons by nucleons (without allowance for damping)

$$d\sigma_s \simeq (x^2 + k^2)^{-1} d\Omega, \quad a \to 0,$$

$$d\sigma_{ps} \simeq k^4 \cos^2 \vartheta \{ [I_0(x^2 + k^2)/3 - x^3/3]^2 + k^6/9 \}^{-1} d\Omega,$$

where $\mathcal{E}$ is the energy of the meson, k is the wave vector, $I_0 \sim (3/2)\, a$, $d\Omega = 2\pi \sin \vartheta\, d\vartheta$.

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Abs Jour : Referat Zhur - Fizika, No 5, 1957, No 10932

When a approaches 0, the cross section $d\sigma_s$ tends to a finite limit, and $d\sigma_{ps} \to 0$. In connection with the fact that the results obtained are substantially different from the results found in the well-known works by Pauli, Duncoff, Kusak, and Serber, the author examines the causes for this difference and notes many errors found in the above works.

Card 3/3

GEYLIKMAN, B.T.

USSR/Nuclear Physics - Meson Fields FD-3332

Card 1/1 Pub. 146 - 4/28

Author : Geylikman, B. T.

Title : Theory of strong bond for meson fields.III

Periodical : Zhur. Teor. i Eksp. Fiz., 29, No 5, 571-584, 1955

Abstract : A pseudoscalar meson field interfering with moving nucleons is analyzed in approximation of strong bond. A theory taking into account the polarization of the nucleonic vacuum is developed. Ten references, 5 foreign.

Institution : Moscow State Pedagogical Institute

Submitted : June 12, 1954

GEYLIKMAN, B. T.

"Survey of the Theory of Fission," a report presented at the Conference on the Physics of Nuclear Fission, 19-21 January 1956, Atom. Energ., No.1, 1956

GOL'DMAN, Iosif Il'ich; KRIVCHENKOV, Vladimir Dmitriyevich; [redacted]; professor, redaktor; ZHABOTINSKIY, Ye.Ye., redaktor; GAVRILOV, S.S., tekhnicheskiy redaktor

[Collection of problems in quantum mechanics] Sbornik zadach po kvantovoi mekhanike. Pod red. B.T.Geilikmana. Moskva, Gos.izd-vo tekhniko-teoret. lit-ry, 1957. 279 p. (MLRA 10:12)
(Quantum theory--Problems, exercises, etc.)

GEYLIKMAN, B.T.

Theory of nuclear fission; review. Aton.energ.supplement no.1:5-26 '57. (MIRA 10:10)
(Nuclear fission)

CEYLIKMAN, B.T.

56-5-34/55

AUTHOR CEYLIKMAN, B.T.

TITLE Magnetic Interaction of Electrons and the Anomalous Diamagnetism.
(Magnitnoye vzaimodeystviye elektronov i anomal'nyy diamagnetism.- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 32, Nr 5, pp 1206-1211 (USSR)

ABSTRACT The paper under review investigates the diamagnetic properties of electrons in a metal under consideration of the magnetic interaction of electrons. The vector potential $\vec{A}$ being gauged arbitrarily, the energy of the system in the magnetic field must be of the following form:

$$E=\sum_{\vec{q}} \left[(\vec{A}_{\vec{q}},\vec{A}_{-\vec{q}})-q^{-2}(\vec{q},\vec{A}_{\vec{q}})(\vec{q},\vec{A}_{-\vec{q}})\right] \varphi(q^2), \vec{A}_{\vec{q}}=(1/V) \int e^{-i(\vec{q}\,\vec{r})/\hbar} \vec{A}(\vec{r})\,d\vec{r}.$$

Because the field strength changes only slightly, it is possible to expand φ in a series:

$$\varphi(q^2) = \varphi_0 + \varphi_1 q^2 + \ldots\ldots$$

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Magnetic Interaction of Electrons and the Anomalous Diamagnetism..

An anomalous diamagnetism is possible only then if the term φ_0 is different from zero. In such a case, we obtain for the field strength the London's equation. In order to obtain a London's equation at div $\vec{A} \neq 0$, a pole of the type q^{-2} is required in the expression for E or $\vec{j}_p$.

But according to M. Schafroth (Helv. Phys. Acta, Vol 24, p. 645 (1951)) the Coulomb's interaction leads in the perturbation theory not to the anomalous diamagnetism. It is shown in this context that also the magnetic interaction of the electrons in the framework of the perturbation theory does not lead to an anomalous diamagnetism. The relativistic Hamiltonian is the best choice for the quantized electromagnetiv field. In this context, the interaction of electrons (neither the Coulomb's interaction nor the magnetic interaction) is not introduced in its explicit form but rather is the result of the exchange of virtual photons (longitudinal and transverse). Then one obtains the first non-vanishing and with respect to A quadratic correction of the energy in fourth perturbation theoretical approximation: in second approximation with respect to the

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56-5-34/55

Magnetic Interaction of Electrons and the Anomalous Diamagnetism.

outer potential and in second approximation with respect to the potential of the radiation field. Eight graphs correspond to this correction. The matrix elements for two graphs are written down in the paper under review. Then the paper proceeds to follow step by step the further course of the computations. The magnetic interaction yields no anomalous diamagnetism. The terms of higher order with respect to q^2 yield a correction of the usual diamagnetism. It is not necessary to take into account the higher perturbation theoretical approximations for the magnetic interaction. It appears that application of the perturbation theory to the magnetic interaction is justified.
(1 reproduction)

ASSOCIATION: Moscow State Pedagogic Institute.
PRESENTED BY: -
SUBMITTED: 13.7.1956.
AVAILABLE: Library of Congress.

CARD 3/3

GEYLIKMAN, B.T.

PA - 2053

AUTHOR: GEJLIKMAN,B.T., GINZBURG,V.L.
TITLE: In Memory of S.Z.BELEN'KIJ.
PERIODICAL: Uspekhi Fizicheskikj Nauk, 1957, Vol 61, Nr 1, pp 129-132(U.S.S.R.)
Received: 3 / 1957 Reviewed: 3 / 1957

ABSTRACT: On September 21st 1956 SEMEN ZACHAROVIC BELEN'KIJ, a well-known theoretical physicist whose reputation is mainly based on his works on cosmic rays, died at the age of 41. S.Z.BELEN'KIJ was born in Moscow on the 14.June, 1916; after his leaving examination (1931) he worked two years in an electric plant. From 1933 to 1938 he studied with great success at the physical faculty of Moscow university and worked from 1941 to 1943 at the Central Aero-Hydrodynamic Institute. He then undertook a dissertation at the Physical Institute of the Academy of Science of the USSR and became the head of one of the theoretical sectors of this institute in 1948. BELEN'KIJ wrote his first scientific work (on the scattering of X-rays) during his last university term. These works showed the author's aptitude for theoretical physical work. In 1938, as an aspirant at Moscow university, he was able to concentrate his whole attention on the problem I.E.TAMM had asked him to solve (theory of cascade showers in cosmic rays). BELEN'KIJ was able to determine the spectrum of cascade electrons and this work served as a basis for his candidates' dissertation written in 1941. (Reviewer's comment: In the USSR there are candidates'- and doctors' disserta-

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tions). In connection with the problems solved by experiments BELEN'KIJ undertook quite a series of further investigations, in which the development of the theory of cascade showers was practically completed. In 1948 his monography "Cascade processes in cosmic rays" was published. BELEN'KIJ's works on the cascade theory are of fundamental importance. Though it is true that the investigations of the cascade showers form the main part of BELEN'KIJ's entire activity, they were not his only domain of research; he also dealt with hydrodynamic problems as well as with the hydrodynamic and statistical theory of the multiple production of particles at high and superhigh energies. Recently BELEN'KIJ dealt with the nuclear cascade processes and with the phenomenological theory of the scattering of nucleons by nucleons at high energies. For his merits in solving applied problems he was awarded the Lenin order and the Stalin prize.

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.

Card 2/2

GEYLIKMAN, B. T. (Moscow, USSR)

"Sur l'asymetrie axiale des noyaux."

report presented at the Intl. Congress for Nuclear Interactions (Low Energy) and Nuclear Structure, Paris, 7-12 July 1958 (Intl. Union Pure and Applied Physics)

AUTHOR: Gevlikman, B.T. SOV/34-4-60/60

TITLE: On the Thermal Conductivity of Superconductors (O teploprovodnosti sverkhprovodnikov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 4, pp. 1042-1044 (USSR)

ABSTRACT: Because of the existence of a gap in the energy spectrum of superconductors at $T \ll T_k$ (T_k denotes the temperature of the translation to the non superconducting state) the number of electronic excitations and therefore also the electronic heat conductivity is exponentially small ($\sim \exp(T_k/T)$). Therefore it is the case that with $T \ll T_k$ the thermal conductivity of the lattice connected with the reflection of phonons at the boundaries and with the scattering of phonons on the admixtures and lattice defects plays the main part. However, at somewhat higher temperatures (which however are considerably below T_k), the thermal conductivity $\varkappa_e$ due to the electrons becomes comparable with that of the lattice and may also surpass the latter in the case of samples not containing many impurities. The scattering of electrons on admixtures makes the largest contribution towards

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K_s. Only with $T \lesssim T_k$ it is possible that also the interaction of the electrons with phonons and the interaction of electrons among themselves may exercise a noticeable influence upon K_s. The author here investigates the scattering of electrons by admixtures. The Hamiltonian of the interaction of the electrons with the atoms of admixtures has in the case of the usual type of metals the form

$$H' = \sum_{\vec{k}'} (a^+_{\vec{k}',1/2} a_{\vec{k}',1/2} + a^+_{\vec{k}',-1/2} a_{\vec{k}',-1/2}) V_{\vec{k},\vec{k}'}$$

(1/2 and -1/2 here denote the spin coordinates and $a^+_{\vec{k},\pm 1/2}$ denotes the twofold quantized amplitude). New amplitudes for the electronic excitations in superconductors are written down. For elastic scattering an equation is written down, and a formula is given for the scattering probability. The probability of scattering by admixtures differs in electronic excitations in a superconductor from the scattering probability w_0 in the usual metals by a factor. Let a temperature gradient $\partial T/\partial x$ be assumed to exist in the superconductor in which case the electric field in the superconductor, unlike what is the case in ordinary metal, is assumed to be equal to zero. However in the equilibrium state the current $\vec{j}_n$ of the normal component is fully compensated

On the Thermal Conductivity of Superconductors 56-34-4-60/60

by the opposite superconductive current $\vec{j}_s$: $\vec{j} = \vec{j}_n + \vec{j}_s = 0$.

The author writes down the kinetic equation for the distribution function f of the excitations and therefrom the heat flow is calculated. In conclusion the author thanks L.D. Landau for his valuable advice and discussions and N.V. Zavaritskiy for telling him the results obtained by this work (Ref 6) before it was published. There are 7 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut (Moscow State Pedagogical Institute)

SUBMITTED: January 27, 1958

Card 2/3

24(5)
AUTHOR: Geylikman, B. T.

TITLE: On Axially Asymmetric Nuclei (Ob akhial'no nesimmetrichnykh yadrakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 989 - 991 (USSR)

ABSTRACT: In the present paper it is shown on the basis of a generalized model that, in principle, axially-asymmetric nuclei can exist. Already Davydov and Filippov assumed (Ref 1) that axial asymmetry may exist in medium and heavy nuclei, and they calculated the corresponding nuclear energy levels and the probability of radiation transitions. Theoretically, the assumption of an axial asymmetry of the nucleus, however, causes difficulties, because according to Bohr's model in equilibrium this asymmetry is equal to zero. However, the authors show that in the case of an expansion in series within the framework of a generalized model, the axial asymmetry of the nucleus

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Or Axially Asymmetric Nuclei

may, in a quite general way, be different from zero. The non-interacting nucleons above the filled shells are investigated which move in the field of the core. This field may be considered to be an oscillator; the potential course for small U_0-values goes over into a horizontal straight line, which need not be taken into account for small U_0-values. In adiabatic approximation, first the kinetic energy of the "slow" collective degrees of freedom is neglected, and the energy of the "fast" nucleon degrees of freedom is calculated for any arbitrary shape of the nucleus. The successive construction of the nuclear shells is investigated, and it is shown that for certain ω_i the shape of the nucleus may deviate from axial symmetry. In conclusion, the author thanks A.S.Davydov, for having read his paper dealing with this subject (Ref 1) at the author's disposal before it was published, and for his interesting discussions. There are 4 references, 2 of which are Soviet.

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On **Axially** **Asy**metric Nuclei

307/56-33-4-24/52

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut (Moscow Pedagogical State Institute)

SUBMITTED: May 14, 1956

Card 3/3

24(3)

AUTHORS: Geylikman, B. T., Kresin, V. Z. SOV/20-123-2-13/50

TITLE: On the Phononic Thermal Conductivity of Superconductors (O fononnoy teploprovodnosti sverkhprovodnikov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 259-261 (USSR)

ABSTRACT: Several mechanisms of thermal conduction are known to exist which are connected with the interaction of electrons, phonons, and the atoms of the impurity. In superconductors the thermal conduction of the lattice plays an important part. In a previous paper by B. T. Geylikman the electronic thermal conduction connected with the distance between electrons in the impurities was calculated. In the present paper the thermal conductivity due to the action of electrons on phonons is determined. There exists also a temperature range in which this mechanism is one of the most important ($T \lesssim (0.3\text{-}0.5)T_k$). First, the kinetic equation for the distribution functions of phonons is written down. In the Hamiltonian of electron-phonon interaction one passes over to new Fermi amplitudes by means of a transformation. Next, a formula for the collision integral is given on the basis of these new amplitudes, and also the

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On the Phononic Thermal Conductivity of Superconductors

SOV/20-123-2-13/50

distribution function is written down. The calculation process is outlined. The expression obtained for the thermal heat flow of the lattice is given. The formulae found give a good description of the experimental results obtained by R. J. Sladek (Ref 5). There are 5 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina (Moscow State Pedagogical Institute imeni V. I. Lenin)

PRESENTED: July 12, 1958, by L. A. Artsimovich, Academician

SUBMITTED: July 10, 1958

Card 2/2

24(5)
AUTHOR: Geylikman, B. T.

SOV/20-123-3-13/54

TITLE: On the Approximate Solution of the Quantum Problem of Many Bodies in the Case of the Statistics of Bose (O priblizhennom reshenii kvantovoy zadachi mnogikh tel v sluchaye statistiki Boze)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3, pp 430-432 (USSR)

ABSTRACT: According to N. N. Bogolyubov (Ref 1), an increase in density and in interaction energy of the particles of the Bose (Boze) gas reduces the number of the particles N_0 in the condensate. It is interesting, therefore, to investigate the case of a small N_0. For this purpose, the terms a_0^+ and a_0 are separated out in the Hamiltonian $H = T + U = \sum T_k a_{\vec{k}}^+ a_{\vec{k}} + (1/2) \sum V_q a_{\vec{k}}^+ a_{\vec{l}}^+ a_{\vec{k}+\vec{q}} a_{\vec{l}-\vec{q}}$ of the system, but they are not assumed to be great. The author first assumed that $T \sim U$, and he endeavors to take into account (together with T) the main terms in U. Also in the present case, the author introduces new amplitudes α_k, α_k^+ (of the same type as in the above mentioned paper of Bogolyubov) by means of a canonical transformation: $a_k = u_k \alpha_k + v_k \alpha_{-k}^+$; $u_k^2 - v_k^2 = 1$. The parameters

Card 1/2 u_k and v_k are deduced by minimizing the mean value of H

with respect to the new occupation number in which case the additional condition of the constancy of the particle numbers has to be satisfied. The corresponding calculations are given step by step. The solution of these equations will be discussed in a following paper. In a certain case, also a negative dispersion of sound will be possible. Finally, the author discusses the conditions of the applicability of the theory described in this paper. There are 3 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina
(Moscow State Pedagogical Institute imeni V. I. Lenin)

PRESENTED: July 12, 1958, by L. A. Artsimovich, Academician

SUBMITTED: July 10, 1958

GEYLIKMAN, B. T.

21(8) PHASE I BOOK EXPLOITATION SOV/2081

International Conference on the Peaceful Uses of Atomic Energy, 2d., Geneva, 1958

Doklady sovetskikh uchenykh; yadernaya fizika (Reports of Soviet Scientists; Nuclear Physics) Moscow, Atomizdat, 1959. 552 p. (Series: Its: Trudy, Vol. 1) 8,000 copies printed.

Eds. (Title page): A.I. Alikhanov, Academician; V.I. Veksler, Academician; and N.A. Vlasov, Candidate of Physical and Mathematical Sciences; Ed. of this volume: S.I. Brodov and B.F. Zaretskiy, Candidates of Physical and Mathematical Sciences; Ed. (Inside book): G.L. Smolyan; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This collection of articles is intended for scientific research workers and other persons interested in nuclear physics. The volume contains 43 papers presented by Soviet scientists at the Second Conference on Peaceful Uses of Atomic Energy, held in Geneva in September 1958.

COVERAGE: It is divided into two parts. Part I contains 17 papers dealing with plasma physics and controlled thermonuclear reactions, and Part II contains 26 papers on nuclear physics, including problems of particle acceleration and of cosmic ray physics. The first paper by L.A. Artsimovich presents a review of Soviet work on controlled thermonuclear reactions. The remaining papers in Part I deal with particular problems in this field.

papers in Part II deal in detail with various problems in nuclear physics, such as the fission of heavy atoms and their isotopes, and with the study of cosmic radiation by means of artificial earth satellites and rockets, described in a paper by S.N. Vernov. The Russian-language edition of the proceedings of the conference is published in 16 volumes. The first 6 volumes contain all the papers presented by Soviet scientists as follows: Volume (1), Yadernaya fizika (Nuclear Physics); Volume (2), Yadernyye reaktory i yadernaya energetika (Nuclear Reactor and Nuclear Power); Volume (3), Yadernoye goryucheye i metally (Nuclear Fuel and Reactor Metals), Volume (4), Khimiya radioelementov i radiatsionnykh prevrashcheniy (Chemistry of Radioelements and of Radiation Transformations); Volume 5, Radiobiologiya i radiatsionnaya meditsina (Radiobiology and Radiation Medicine); Volume (6) Polucheniye i primeneniye izotopov (Production and Use of Isotopes). The other 10 volumes contain selected papers presented at the Conference by non-Soviet scientists. In the present volume discrepancies between the English and Russian language edition of the proceedings have been noted in three articles where the texts are not identical: Akhiyezer, et al, "High Frequency Plasma Oscillation"; Andrianov, et al, "High Current Pulsed Discharge"; and Bogolyubov, "Investigations of the Many-body Problem". The serial numbers of reports 2502 and 2504 are reversed in the English edition. Report 2211, by Sinelnikov, et al, is numbered 2536 in the English edition.

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21(7)

AUTHOR: Geylikman, B. T.

TITLE: On Nuclear Fission Asymmetry (Ob asimmetrii deleniya yader)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 3, pp 290 - 297 (USSR)

ABSTRACT: One of the most important characteristics of nuclear fission and of the processes occurring in a reactor is the mass distribution of the fission fragments. If the liquid-drop model is drawn into consideration, a symmetric mass distribution of fission fragments is most probable. This statement, however, is at variance with the measurements which have hitherto been conducted. In order to find the mass distribution of fission fragments of some nuclei the energy of the disintegrating nucleus previous to fragment fly-off is calculated theoretically, taking into account shell effects. It is shown that the energy minimum corresponds only to an asymmetric fission. An attachment contains a deduction of the energy of electrostatic interaction of two deformed nuclei with the atomic weights A_1, A_2 and the atomic numbers Z_1 and Z_2 for a given distance of the centers of the nuclei. I. G. Krutikov took

part in the numerical computations. The results of the investigation have been discussed with S. T. Belyayev and A. B. Migdal. There are 6 figures and 19 references, 5 of which are Soviet.

SUBMITTED: August 5, 1958

SOV/89-6-3-7/29

21(7)

AUTHOR: Geylikman, B. T.

TITLE: On the Excitation Energies of Fragments From Nuclear Fission (Ob energii vozbuzhdeniya oskolkov pri delenii yader)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 3, pp 298 - 305 (USSR)

ABSTRACT: The multiplication coefficient of chain reactions in nuclear reactors is in a decisive manner dependent upon the number of secondary neutrons which are set free in the fission process. This number is, however, entirely responsible for the amount of excitation energy imparted to the fission fragments. If, therefore, the excitation energy of the fission fragments can be calculated as a function of the atomic number Z and of the atomic weight A of the fissionable nucleus, the results will be of paramount interest in nuclear power engineering. It is then shown theoretically, that the excitation energy of the fission fragments can be obtained by solving a system of equations, in which the parameters describing the deformation of the fission fragments and the distance between the fragments is taken into account. The initial conditions for this system of equations are deduced. The excitation

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On the Excitation Energies of Fragments From Nuclear Fission SOV/89-6-3-7/29

energies of the fission fragments are numerically computed for a number of nuclei: U^{236}, Pu^{240}, Cm^{242}, and Cf^{252} and compiled in a table. The dependence of the excitation energy of the fissionable nucleus upon Z and A is investigated. The numerical computations of the various equations were carried out by I. G. Krutikov. The results were discussed with V. M. Galitskiy and V. M. Strutinskiy. There are 1 table and 12 references, 4 of which are Soviet.

SUBMITTED: August 5, 1958

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21(8) SOV/56-36-1-34/62

AUTHOR: Geylikman, B. T.

TITLE: The Disruption of a Charged Liquid Drop and the Fission of a Nucleus (Razryv zaryazhennoy zhidkoy kapli i deleniye yadra)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 249-252 (USSR)

ABSTHACT: The present paper shows that knowledge of the internal coordinates and velocities of fragments makes it possible to estimate the excitation energy of the fragments in nuclear fission. The following is assumed: The liquid is incompressible, the motion of the liquid is potential-like before and after disruption, and the radius vectors of the surface of the drop (in the axially-symmetric case only) have the form

$r(\vartheta)/R = 1 + \sum \alpha_n P_n(\cos\vartheta)$; $r_i(\vartheta_i)/R_i = 1 + \sum \alpha_n^{(i)} P_n(\cos\vartheta_i)$, $i = 1,2$. The origin of coordinates in all three cases is in the centers of mass of the drops. On the basis of this condition and on that for the conservation of volume, the coefficients α_0, α_1, $\alpha_0^{(i)}$ and $\alpha_1^{(i)}$ are expressed by other parameters α_n, $\alpha_n^{(i)}$.

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The Disruption of a Charged Liquid Drop and the Fission of a Nucleus

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The author investigates the variation of the velocity of an arbitrary mass element Δm_{drop} of the drop during the time needed for disruption of the drop τ_{disr}:

$\Delta \vec{v}_{drop} = \int_0^{\tau_p} f_{drop}\, dt / \Delta m_{drop} \sim f_{drop}\, \tau_p / \Delta m_{drop}$. τ_{disr} is assumed to be so small that $\Delta v_{drop} \ll v_{drop}$ holds. It is then possible to consider the velocities before and after disruption as being equal. An equation for the velocity potential before disruption of the drop is given. The potential energy U of the nucleus and its shape before disruption were calculated within the framework of the drop-model by S. Frankel and N. Metropolis (Ref 2) for the states corresponding to the minimum energy. The author then estimates the ratio between the kinetic energy of the internal motion of the fragments and the kinetic energy of the centers of mass of the fragments. It is possible to consider the sum of the internal kinetic energies and the deformation energy of both fragments at the

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point of disrupture of the neck of the drop to be an approximated estimate of the excitation energy. Finally, the ratio between the excitation energies of the two fragments is estimated for the case of a given Z^2/a. The author thanks I. G. Krutikova for carrying out numerical computations. There are 1 table and 10 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut (Moscow State Pedagogical Institute)

SUBMITTED: July 9, 1958

24(1) SOV/56-36-3-66/71

AUTHORS: Geylikman, B. T., Krasin, V. Z.

TITLE: On the Thermal Conductivity and Sound Absorption in Superconductors (O teploprovodnosti i pogloshchenii zvuka v sverkhprovodnikakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 959 - 961 (USSR)

ABSTRACT: The present paper ("Letter to the Editor") is based upon two earlier papers (Refs 1,2) by the same authors. In the first, the electronic thermal conductivity κ_e of superconductors was investigated, and the latter investigates the phonon thermal conductivity κ_p in dependence on phonon-electron collisions. The present paper shows that the temperature dependence of κ_e and κ_p derived in references 1 and 2 may serve as an explanation of the experimental data today available on thermal conductivity. According to reference 2 it holds that $\kappa_p^s = \kappa_p^n F(T)/F(T_k)$; the index s denotes the superconductive -

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On the Thermal Conductivity and Sound Absorption in Superconductors SOV/56-36-3-66/71

and n the normal state. For F(T) a formula extending over several lines is given. In a diagram (Fig 1) the data measured by Sladek for In-Tl-alloy (Ref 3) for κ_s/κ_n as well as the curve calculated by the authors are plotted. Agreement is good. For $T \rightarrow 0$ the curve shows an exponential increase of the κ_p-values. In the following various relations between κ_e, κ_p and κ_{pe} (in connection with phonon-electron scattering) and κ_{pd} (in connection with phonon-lattice defect scattering) are discussed. Sound absorption in electronic excited superconductors shows that in the case in which the sound frequency is $\omega \gg 1/\tau$ (τ= relaxation time) there is no deviation from that in normal metals. For the ratio between sound quantum absorption and -emission a formula is finally given. The authors in conclusion thank Academician L. D. Landau for his valuable advice. There are 2 figures and 13 references, 5 of which are Soviet.

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On the Thermal Conductivity and Sound Absorption in Superconductors

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut (Moscow Pedagogical Institute)

SUBMITTED: December 18, 1958

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10 (4)

AUTHOR: Geylikman, B. T. SOV/56-37-3-62/62

TITLE: On the Problem of the Critical Velocities in the Flow of He II in Capillaries

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3(9), pp 891 - 892 (USSR)

ABSTRACT: The statements made by Onsager and Feynman (Refs 1,2) concerning the vortex filaments make it possible to determine the magnitudes of the critical velocity in the rotation of superfluid helium in a cylinder and during its outflow from a narrow capillary into a larger vessel. In the former case the vortex filaments have the shape of straight lines which are perpendicular to the cylinder axis, and in the latter they have the shape of rings forming in the vessel near the place where the capillary is connected. In the present "Letter to the Editor" it is shown that an evaluation of the critical velocities may also be carried out for the flow of helium along a capillary. It is assumed in this connection that the vortex filaments are closed and are perpendicular to the capillary axis in the liquid. The shape of the vortex filaments depends naturally on the shape of the capillary cross section.

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The angular momentum of the liquid is equal to zero, but the momentum differs from zero and lies in the direction of the capillary axis, i.e. in the direction of the velocity of flow $\vec{v}$. According to Landau (Ref 3) the energy variation of helium is $\Delta E = E_v - p_v v$ (E_v and p_v denote energy and momentum of the vortex filaments). This relation holds in a system of coordinates that is at rest with respect to the capillary walls. A vortex filament forms if $\Delta E < 0$. As, when a vortex filament occurs, superfluidity vanishes, $\Delta E = 0$, $v_k = E_v/p_v$ holds for the critical velocity v_k. For a thin vortex filament it holds that $p_v = \varkappa\rho\int dF_n$ ($\varkappa$ is the velocity of circulation in the orbit of a vortex filament, ρ denotes density). For energy $E_v = \frac{\rho}{8\pi}\int \frac{(\mathrm{rot}\,\vec{v}(\vec{r}),\ \mathrm{rot}\,\vec{v}(\vec{r}'))}{|r - r'|}\,d\vec{r}\,d\vec{r}'$ is obtained, and by quantization of $\varkappa$ according to Feynman: $\varkappa = 2\pi n_s \hbar/m$, $n_s = 1,2,\ldots$, it is possible to set up v_k for a

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On the Problem of the Critical Velocities in the Flow of He II in Capillaries

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round capillary (radius r) at $v_k = (\hbar/mr)(\ln(r/d) + \ln 16 - 7/4)$, where d is the diameter of a filament cross section, $d \ll r$. For a rectangular cross section a formula is deduced as well, which is simplified for a very flat capillary ($b \ll a$) to $v_k = (\hbar/mb)[\ln(2b/d) + 1/4]$. ($a, b \gg d$). According to Lifshits and Pitayevskiy (Ref 5) the value $2 \cdot 10^{-7}$ cm is to be assumed for d, in which case $v_k \approx 80$ cm/sec with $r \approx 10^{-5}$ cm. This value was also obtained by Feynman. The author thanks V. M. Galitskiy and A. B. Migdal for discussions. There are 5 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V. I. Lenina (Moscow State Pedagogical Institute imeni V. I. Lenin)

SUBMITTED: June 20, 1959

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B.T. Geylikman

24(0) SOV/53-67-4-7/7

AUTHOR: Chentsov, R.

TITLE: The Fifth All-Union Conference on the Physics of Low Temperatures (5-ye Vsesoyuznoye soveshchaniye po fizike nizkikh temperatur)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 67, Nr 4, pp 745-750 (USSR)

ABSTRACT: This Conference took place from October 27 to November 1 at Tbilisi; it was organized by the Otdeleniye fiziko-matematicheskikh nauk Akademii nauk SSSR (Department of Physico-mathematical Sciences of the Academy of Sciences, USSR), the Akademiya nauk Gruzinskoy SSR (Academy of Sciences, Gruzinskaya SSR), and the Tbilisskiy gosudarstvennyy universitet im. Stalina (Tbilisi State University imeni Stalin). The Conference was attended by about 300 specialists from Tbilisi, Moscow, Khar'kov, Kiyev, Leningrad, Sverdlovsk, and other cities as well as by a number of young Chinese scientists at present working in the USSR. About 50 lectures were delivered which were divided according to research fields. - I. Liquid Helium. Reports were delivered by the researchers of the Laboratoriya nizkikh temperatur TGU (Laboratory for Low Temperatures of Tbilisi State University) under the supervision of E. L. Andronikashvili: D. S. Tsakadze, Yu. G. Mamaladze and S. G. Matinyan spoke about the investigation of the damping of rotational oscillations of a single disk in He II in dependence on the rotation rate. G. A. Gamtsemlidze spoke about the influence exercised by the state of the disk surface on critical rate and on the damping of its oscillations in the transcritical range. V. P. Peshkov (IFP AN SSSR - Institute for Physical Problems AS USSR) spoke about further investigations of the boundary between superfluid and non-superfluid helium (discovered by himself) in a heat flow. This boundary characterizes the density- and temperature jump. Kuang, Wei-yen, K. N. Zinov'yeva and V. P. Peshkov spoke about investigations at extremely low temperatures (down to 0.5°K) which were attained by the method of the evacuation of

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He^3-vapors. Kuang, Wei-yen investigated in the interval 0.57 - 2.07°K the phenomenon of the temperature jump (discovered by P. L. Kapitsa in 1941) on the boundary of a solid (in this case Cu) by means of He II; for the thermal resistance not the T^3-law but a T^n-law holds, where n=2.6±0.1. Zinov'yeva and Peshkov investigated, among other things, also the phase

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diagram of He^3 dissolved in He^4 (20 - 87%). V. L. Ginzburg (FIAN) gave a report on the phenomenological theory of He II in the region of the λ-point in consideration of quantum effects (the theory was developed by himself and by L. P. Pitayevskiy). B. T. Geylikman (IAE AN SSSR - Institute for Atomic Energy, AS USSR) delivered a short report on the theory of phase transition in liquid He^4. I. M. Lifshits and B. G. Sanikidze (KhFTI AN USSR - Khar'kov Physico-technical Institute AS UkrSSR) investigated the melting of solid He^3 on the basis of Landau's theory of the Fermi-fluid and found that melting pressure as a function of temperature has a minimum at 0.5°K (Pomeranchuk-effect). The comprehensive discussion was held under the supervision of P. L. Kapitsa.-

GEYLIKMAN, B.T.

Excitation of fission fragments and their mass distribution.
Zhur.eksp.i teor.fiz. 38 no.3:955-958 Mr '60.
(MIRA 13:7)

(Nuclear fission)

83203
S/056/60/039/002/040/044
B006/B070

24.7600

AUTHORS: Geylikman, B. T., Kresin, V. Z

TITLE: Thermo-magnetic Effects in Superconductors

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 2(8), pp. 502 - 503

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TEXT: The purpose of the present paper was to show that the coefficient of the Leduc-Righi effect remains unaltered when a metal passes from the normal to the superconducting state. For the study of thermo-magnetic effects in semiconductors, an equation of motion for the distribution function of the electron excitations is commonly used The authors derive it in the form $-\frac{\partial f}{\partial \varepsilon}\frac{\varepsilon}{T}v_x\frac{\partial T}{\partial x}+\frac{eH}{c}\left(v_y\frac{\partial f}{\partial p_x}-v_x\frac{\partial f}{\partial p_y}\right)\frac{\xi}{|\xi|}=-\frac{f-f_0}{\tau}$. Here, the existence of a temperature gradient in the x-direction and of a magnetic field perpendicular to the heat flux is taken into account. ξ is the energy of the electron in the normal metal. Δ the gap in the energy

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spectrum, $\varepsilon = \sqrt{\xi^2+\Delta^2}$, $\vec{v} = \partial\varepsilon/\partial\vec{p}$, and $\xi = (p^2-p_0^2)/2m$. The relaxation time $\tau = \tau_0 \varepsilon/|\xi|$, where τ_0 is the relaxation time for ordinary electrons. The equation of motion is solved by the method of successive approximation ($f = f_0 + f^{(1)} + f^{(2)}$) on the assumption that either the dimensions of the body be small compared to the depth of penetration, or that $\partial H/\partial z = 0$. The following relations are obtained for the correction terms to the distribution function (due to temperature gradient and magnetic field):

$$f^{(1)} = \frac{p_x}{m}\tau_0 \frac{\partial f_0}{\partial \varepsilon}\frac{\varepsilon}{T}\frac{\partial T}{\partial x}\frac{\xi}{|\xi|}, \quad f^{(2)} = \tau_0^2 \frac{1}{T}\frac{eH}{cm}\frac{\partial T}{\partial x}\frac{\varepsilon^2}{|\xi|}\frac{\partial f_0}{\partial \varepsilon} v_y ; \quad f_0 = \left[\exp(\varepsilon/kT)+1\right]^{-1}.$$

The coefficient of the Leduc-Righi effect (which consists in the appearance of a temperature gradient perpendicular to the direction of the resulting heat flux) is $L = \frac{\partial T}{\partial y'}\Big/\frac{\partial T}{\partial x'} H$ (x' coincides with the direction of the resulting heat flux). It is shown that $L = Q_y/Q_x H$ with $Q_y/Q_x = \tau_0 eH/mc$. L is, therefore, independent of Δ, and does not alter on transition from

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the normal to the superconducting state. The Nernst-Ettinghausen effect (appearance of an electric field perpendicular to the resulting heat flux) is, therefore, absent in superconductors. There are 2 Soviet references

ASSOCIATION: Gosudarstvennyy pedagogicheskiy institut (State Pedagogical Institute)

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S/056/61/040/003/028/031
B112/B214

24.7700

AUTHORS: Geylikman, B. T., Kresin, V. Z.

TITLE: The effect of anisotropy on the properties of supraconductors

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 3, 1961, 970-972

TEXT: The present paper deals with the properties of anisotropic supraconductors. The anisotropy of the conductor enters the Hamiltonian operator of the interaction characteristic of conductivity. This Hamiltonian operator is subjected to a canonical transformation according to N. N. Bogolyubov (Ref. 2: ZhETF, 34, 58, 1958). In this way, an integral equation for the band $\Delta(\vec{k})$ of the energy spectrum of the supraconductor is obtained. This equation is solved for an ellipsoidal and a cylindrical supraconductor. In the case of an ellipsoidal conductor the result is: $\Delta(\vec{k},T) = \Delta_1(T)\left[1+\left(\frac{\Delta m}{m_i}\right)^2 \frac{b+c}{a}\left(\frac{11}{6}\cos^4\vartheta-\cos^2\vartheta+\frac{1}{2}\right)\right]$, $\frac{\Delta_1(T)}{T} = 3.06\left[\left(1-\frac{T}{T_k}\right)\left(1+\frac{\Delta m}{m_i}\right)^2 \frac{b+c}{2a}\right]^{1/2}$, where T is the temperature, T_k the

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critical temperature, m_1, m_2 ($\Delta m = m_1 - m_2$) the Fermi surface parameter, a,b,c constants and ϑ the angle between the z-axis of the coordinate system and the vector $\vec{k}$. In connection with this, the specific heat C of the supraconductor is investigated and it is found that

$C_s(T_k)/C_n(T_k) = 2.4 + 1.4 \frac{b+c}{a}(\frac{\Delta m}{m_1})^2$ and $C_s(T)/C_n(T_k)$

$= \frac{1}{\pi T_k}(\frac{\pi}{2})^{1/2} T^{-3/2} \Delta^{5/2}(0) \exp(\frac{-\Delta(0)+\beta}{T}) \sqrt{\frac{\pi T}{2\beta}}$; $\Delta(0) = \overline{\Delta(\vartheta)}$, $\beta = \frac{b+c}{a}(\frac{\Delta m}{m_1})^2 \Delta(0)$ for low temperatures. In the neighborhood of the critical temperature T_k $\Delta(0)$ is the decisive quantity for the specific heat C_s, for $T \to 0$ this quantity is Δ_{min}. The consequence of this is that in the anisotropic model C_s decreases with decreasing temperature more slowly than in the isotropic model, which agrees with the experimental results. Since the Fermi surface parameters appear in the expression of C_s the latter is not a universal function of the temperature as in the isotropic model. This

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B112/B214

The effect of anisotropy...

is the explanation of the difference in the experimental curves for C_s for different supraconductors. There are 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Moskovskiy zaochnyy pedagogicheskiy institut (Moscow Correspondence Pedagogical Institute)

SUBMITTED: December 7, 1960

X

GEYLIKMAN, B.T.; KRESIN, V.Z.

Effect of anistropy on the properties of superconductors. Zhur. eksp.i teor.fiz. 40 no.3:970-972 Mr '61. (MIRA 14:8)

1. Moskovskiy zaochnyy pedagogicheskiy institut.
(Superconductivity) (Anisotropy)

28929
S/056/61/041/004/013/019
B113/B112

24.2140 (1033, 1072, 1482)

AUTHORS: Geylikman, B. T., Kresin, V. Z.

TITLE: Thermal conductivity of pure superconductors and absorption of sound in superconductors

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 4(10), 1961, 1142 - 1150

TEXT: The authors study the electron thermal conductivity of superconductors in connection with scattering of electrons on phonons, as well as the absorption of ultra-sound and sound in superconductors. If one integrates the kinetic equation (written in Fermi amplitudes), into which the required electron distribution function enters, over the angles ϑ between the wave vector $\vec{q}$ of a phonon and the momentum $\vec{p}$ of the electron, and then over the energy ε of the electron excitation, and if one puts $\varepsilon/T = z$, $\hbar\omega/T = x$; $\Delta/T = b$; $|V'|^2 = |V^2|/q$, then one obtains

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Thermal conductivity of pure ....

$$\varphi = \frac{a(\Omega)}{T^4\Phi(T)} \int_b^\infty f_0 e^z z \sqrt{z^2 - b^2}\, dz \frac{\partial T}{\partial x};$$

$$\Phi(T) = \int_0^\infty \frac{4x^4}{e^x - 1} \int_b^\infty \frac{dz}{(e^z + 1)(e^{-z-x} + 1)} + \int_{2b}^\infty \frac{x^4 dx}{e^x - 1} \int_b^{x-b} \frac{dz}{(e^z + 1)(e^{-z} + e^{-x})} \qquad (1.3).$$

Here, $a(\Omega)$ is the function which depends on the angles determining the direction of motion of the electron. If one calculates the heat flow $Q = \int \varepsilon v_x f dp$, where f is the electron distribution function, then one obtains

$$Q = \frac{\text{const}}{\Phi(T) T^3} \overline{a(\Omega)} \left[\int_b^\infty f_0 e^z z \sqrt{z^2 - b^2}\, dz \right]^2 \frac{\partial T}{\partial x}. \qquad (1.4)$$

taking account of (1.3). After calculating the integral entering (1.4), one obtains

$$\varkappa = -Q \Big/ \frac{\partial T}{dx} = \frac{\text{const}}{\Phi(T) T^3} \left[b^3 \sum_{s=1}^\infty K_3(bs) \right]^2, \qquad (1.5),$$

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where $K_2(bs)$ is the Bessel function of an imaginary argument, and $\phi(T)$ is expressed by

$$\Phi(T) = 96\zeta(4)\ln(1+e^{-b}) + \sum_{s=1}^{\infty} s^{-5}e^{-2bs}(80b^4s^4 + 160b^3s^3 + 240b^2s^2 + 240bs + 120) - \ln(e^b+1)\sum_{s=1}^{\infty} s^{-4}e^{-2bs}(64b^3s^3 + 96b^2s^2 + 96bs + 48). \quad (1.6).$$

When studying the absorption of ultra-sound in superconductors, the case is considered in which $\omega \gg \frac{1}{\tau}$, where ω is the audio-frequency, and τ is the relaxation time of electron excitations. Then, the number of phonons of the frequency ω is $N \gg 1$. The absorption coefficient γ is proportional to the difference between the absorption probability of a phonon and the probability of the reverse process, and results from

$$\gamma = \text{const}\cdot T\left[\int_b^{\infty}(f-f')\,dz + D(x)\int_b^{x-b}(1-f-f')\,dz\right]; \quad (A),$$

$$f = (e^z+1)^{-1}, \quad b = \Delta/T, \quad z = \varepsilon/T, \quad x = \hbar\omega/T.$$

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Thermal conductivity of pure ...

where f is the number of electron excitations with the energy ε. The problem of absorption of a longwave sound, where $\omega \ll \frac{1}{\tau}$, is handled by solving the corresponding kinetic equation and calculating the dissipation function. If one integrates the kinetic equation over the angle ϑ between $\vec{p}$ and $\vec{q}$, over $z = \varepsilon/T$, and over the angles in the momentum space of the electrons, one obtains a function $\varphi(\varepsilon)$ in the form $\varphi = \frac{\text{const}}{T^5} \frac{1}{(e^b+1)\,\Phi(T)}$, where $\Phi(T)$ is expressed by (1.6). The dissipation function to be calculated is equal to: $W = T\dot{S}$, where S is the entropy of the gas of electron excitations. If one integrates over ε and over the angles in the momentum space of the phonons, one obtains: $W = \frac{\text{const}}{T^5} \frac{1}{(e^b+1)^2\,\Phi(T)}$. The absorption coefficient of longwave sound is proportional to W, and has the form $\gamma_{se} = \gamma_{ne} \frac{4\,\Phi(T_k)}{(e^b+1)^2\,\Phi(T)}$, where $\gamma_{ne} = \text{const}/T^5$ is the absorption coefficient of sound in normal

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metal, and $\phi(T)$ is expressed by (1.6). The problem of absorption of sound energy by phonons is solved in a similar manner. L. D. Landau, P. A. Pomeranchuk (ZhETF, 7, 180, 1937), and N. N. Bogolyubov (ZhETF, 34, 58, 1958) are mentioned. There are 3 figures and 13 references: 8 Soviet and 5 non-Soviet. The three most recent references to English-language publications read as follows: A. M. Guenelt, Intern. Conf. on Superconductivity, Cambridge, 1959; E. E. Jones, A. M. Toxen, Phys. Rev., 120, 1167, 1960; J. Bardeen, G. Rickayzen, L. Tewordt. Phys. Rev., 113, 982, 1959.

ASSOCIATION: Moskovskiy gosudarstvennyy pedagogicheskiy institut (Moscow State Pedagogical Institute)

SUBMITTED: March 30, 1961

Card 5/5

GEYLIKMAN, B.T.; KRESIN, V.Z.

Anisotropy effect on superconductivity. Fiz. tver. tela 5 no.12:3549-3559 D '63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy zaochnyy pedagogicheskiy institut.

S/056/63/044/004/033/044
B102/B186

AUTHOR: Geylikman, B. T.

TITLE: Theory of Fermi fluid

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44, no. 4, 1963, 1340 - 1348

TEXT: The main characteristics of a Fermi fluid are calculated on the assumption that the interaction potential consists of two components, V_k and V_d, with the radii of action r_k and r_d; $r_k \ll n^{-1/3}$ and $r_d \gg n^{-1/3}$ where n is the particle density. The vertex part $\Gamma_{\alpha\beta,\gamma\delta}(p_1,p_2,p_1+k,p_2-k)$ for $|\vec{k}|p_0 > \omega_k$ is calculated by the method of graph summation (p_0 is the momentum on the Fermi surface). The ground state energy and the other characteristics are obtained by means of the vertex part $\Gamma_{\alpha\beta,\gamma\delta}$ in the limiting case $p_0|\vec{k}|\omega_k^{-1} \to 0$, $\omega_k \to 0$, i.e. by $\Gamma^{\omega}_{\alpha\beta,\gamma\delta}$, which is obtained from the fundamental relations of the theory of the Fermi fluid (Landau). The effective mass of excitations is found to satisfy the relation $1/m^* = 1+\beta_1+\beta_2$ where

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S/056/63/044/004/033/044
B102/B186

Theory of Fermi fluid

$\beta_1 \sim n^{2/3} r_d^{-2}$ and $\beta_2 \sim n^{2/3} r_k^2$. Estimates concerning the energy of the system are also given. There are 5 figures.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskiy institut (Moscow Institute of Physical Engineering)

SUBMITTED: November 20, 1962

Card 2/2

L 6418-66 EWT(d)/EWT(1)/EPF(c)/EEC(k)-2/EPF(n)-2/T/ETC(m) IJP(c) WW/GG

ACC NR: AP5027407 SOURCE CODE: UR/0181/65/007/011/3294/3301

AUTHOR: Geylikman, B. T.; Kresin, V. Z.

ORG: Moscow State Teachers' Correspondence Institute (Moskovskiy gosudarstvennyy zaochnyy pedagogicheskiy institut)

TITLE: Critical temperature for ordinary and anomalous superconductors

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3294-3301

TOPIC TAGS: superconductivity, phonon interaction, electron interaction, low temperature effect

ABSTRACT: A formula is derived for the relationship between the constant of electron-phonon interaction and the critical temperature T_k in the Fröhlich model for ordinary superconductors. An expression is found relating T_k to $\Delta(0)$, the gap in the energy spectrum at the absolute zero of temperature, for anomalous superconductors (Pb, Hg). A model is proposed for the phonon energy which gives a better approximation than the Debye theory. It is suggested that the anomalous properties of Hg are due to the strong relationship between Θ and T. Orig. art. has: 2 figures, 9 formulas.

Card 1/2

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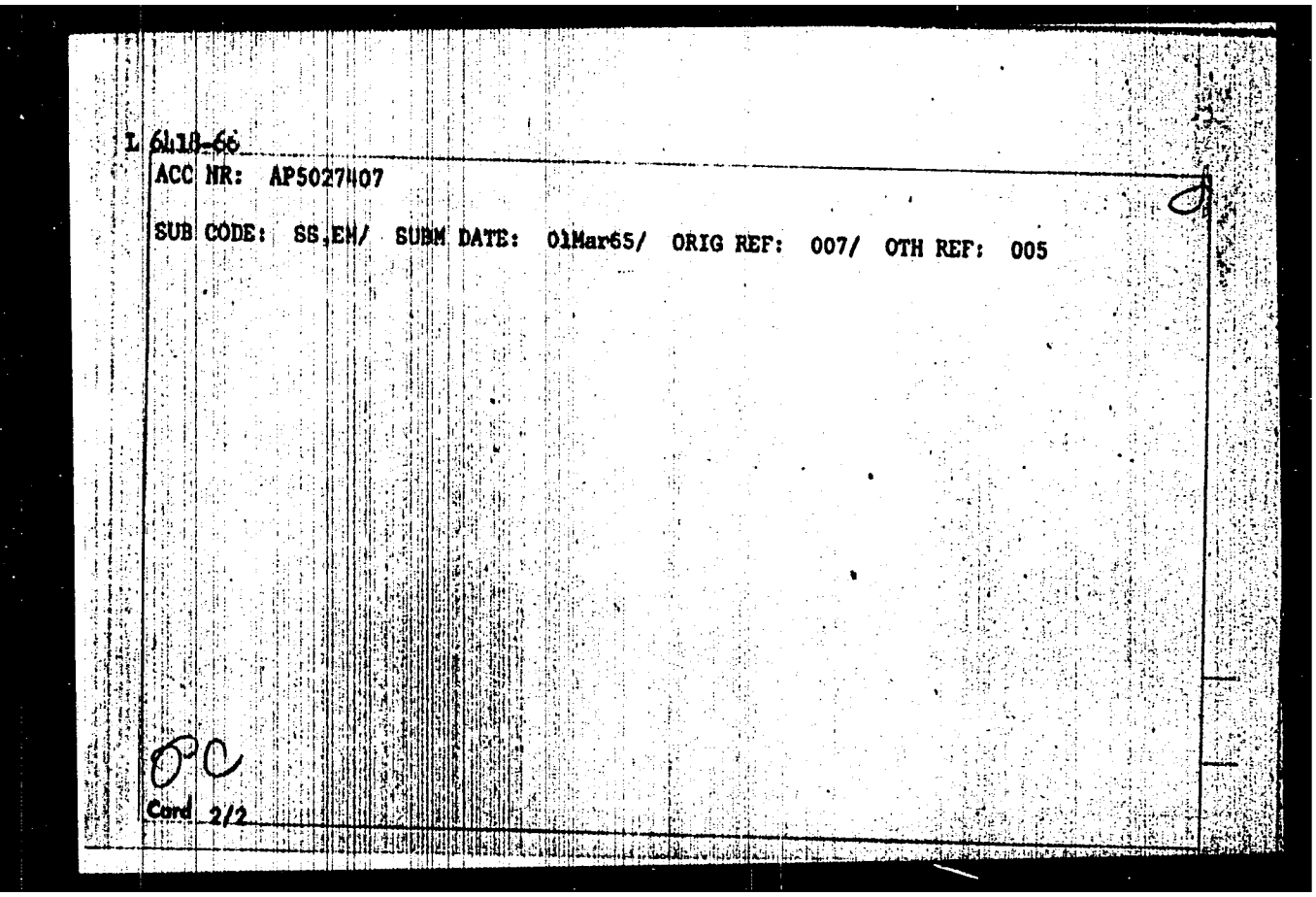


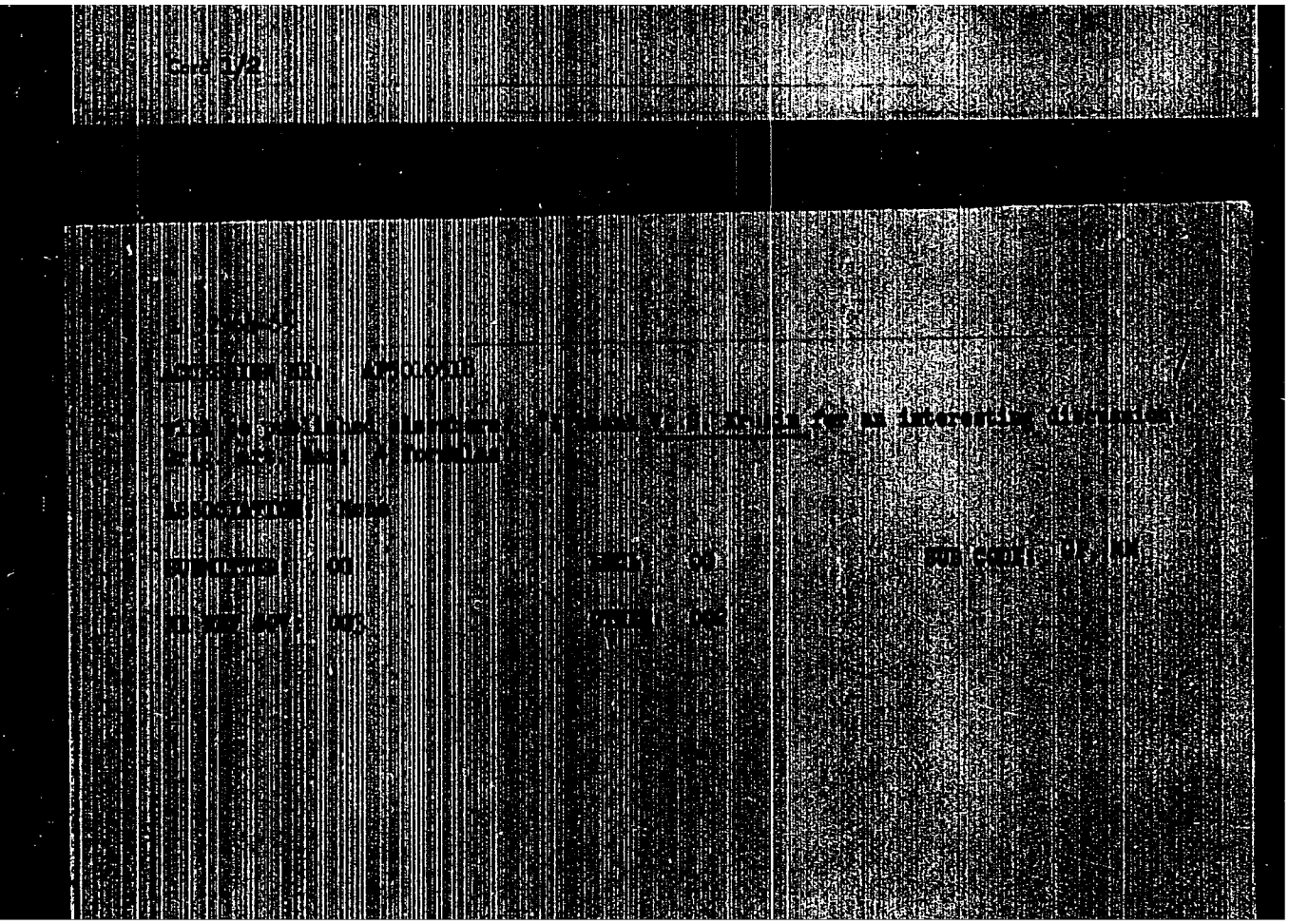
L 6418-66
ACC NR: AP5027407

SUB CODE: SS,EM/ SUBM DATE: 01Mar65/ ORIG REF: 007/ OTH REF: 005

OC
Card 2/2

GRYLIKMAN, B.T.; KHLEBNIKOV, G.I.

A quasi-classical model of triple fission. At.m. energ. 18 no.3:
218-223 Mr '65. (MIRA 18:3)



GINZBURG, V.L.

Electronic mechanism underlying superconductivity. Vop. fiz. nauk SSSR no.2:307-345 F '46. (MLRA 19:1)

1. Moskovskiy fiziko-tekhnicheskiy institut.

L 22764-66 EWT(1)/T/EWP(n)-2/ETC(m)-6 IJP(c) GG

ACC NR: AP6006802 SOURCE CODE: UR/0386/66/003/001/0048/0051

AUTHORS: Geylikman, B. T.; Kresin, V. Z.

ORG: Moscow State Extension Pedagogical Institute (Moskovskiy gosudarstvennyy zaochnyy pedagogicheskiy institut)

TITLE: Jump in specific heat on going from the superconducting to the normal state

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 1, 1966, 48-51

TOPIC TAGS: specific heat, superconductivity, phase transition, energy band structure, critical point

ABSTRACT: The authors investigate the ratio of the electronic specific heats in the superconducting and normal states from the point of view of the two-band model. The need for such an investigation is dictated by the fact that superconductors for which the theoretical requirement that this ratio (α) be smaller than 2.4 is not satisfied are characterized by the presence of overlapping bands. The calcula-

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L 23764-66
ACC NR: AP6006802

tion involves determination of the two self-energy parts of the individual bands and the values of the corresponding energies. The results show that generally speaking the relation $\alpha = 2.4$ is not satisifed in the two-band model, and that values > 2.4 are perfectly admissible. This shows that the band overlap for superconducting elements is not an exception but the rule. In particular, all elements for which experiment yields $\alpha > 2.4$ have a non-single-band structure (Nb, Ta, and V have $\alpha = 3.07$, 2.58, and 2.57, respectively). The overlap effect is small for elements for which $\alpha \leq 2.4$. In the presence of two gaps, a deviation is observed of the specific heat from the ordinary exponential dependence in the low temperature region. It is concluded from the analysis that the temperature variation of the specific heat changes appreciably in the presence of an overlapping energy band. The magnitude of the jump in specific heat on going from the superconducting state to the normal phase is thus likewise essentially different. At the critical point, the non-single-band model yields larger values for α than the isotropic single-band model. Orig. art. has: 4 formulas.

SUB CODE: 20/ SUBM DATE: 22Nov65/ ORIG REF: 008/ OTH REF: 005

Card 2/2

L 24319-66 EWT(1) IJP(c) GG

ACC NR: AP6007270 SOURCE CODE: UR/0053/66/088/002/0327/0345

57
B

AUTHOR: Geylikman, B. T.

ORG: Moscow Physicotechnical Institute (Moskovskiy fiziko-tekhnicheskiy institut)

TITLE: The electronic mechanism of superconductivity [2]

SOURCE: Uspekhi fizicheskikh nauk, v. 88, no. 2, 1966, 327-345

TOPIC TAGS: superconductivity, electron interaction, energy band structure, critical temperature

ABSTRACT: This is a review article dealing essentially with the feasibility of semiconductors having higher critical temperatures than are presently attainable. It is shown that a pure electronic mechanism described by the author earlier (ZhETF v. 48, 1194, 1965), similar to W. A. Little's mechanism for superconducting polymers (Phys. Rev. v. A134, 1416, 1964; Scientific American v. 212(2), 21, 1965), leading to high critical temperatures, can exist in principle in the case of ordinary three-dimensional metals. Special attention is paid to two models: (i) a pure transition-group metal with two overlapping unfilled bands (or an ordered alloy of a metal with another metal (compound) with comparable concentrations of the two components and identical structure of the electron spectrum), and (ii) an ordered alloy of a metal with a nonmetal, with comparable component densities, in the case when the electrons of the upper unfilled band of the shell of the nonmetal atom are not collectivized. The theoretically feasible critical temperature for the first model is found to be

2

UDC: 530.145 + 537.312.62

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L 24319-66

ACC NR: AP6007270

of the order of 100--1000K. The conditions for appearance of superconductivity in the second model are more stringent. The section headings are: 1. Effective interaction of electrons in the model of two overlapping bands. 2. Pairing and critical temperature in the model of two overlapping bands. 3. Alloy of metal with nonmetal. An appendix contains the calculation of the Green's function and of the energy gaps for the electrons for the case of free s-electrons and strongly bound d- or f-electrons. Orig. art. has: 6 figures and 42 formulas.

SUB CODE: 20 / ORIG REF: 015/ OTH REF: 006

SUBM DATE: none

Card 2/2

L 01054-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/GG

ACC NR: AP6030949 SOURCE CODE: UR/0181/66/008/009/2536/2546

61
B

AUTHOR: Geylikman, B. T.

ORG: none

TITLE: Electron mechanism of superconductivity in alloys

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2536-2546

TOPIC TAGS: superconductivity, electron, electron mechanism

21

ABSTRACT: The author investigated the electron mechanism of superconductivity in metals with two overlapping zones, resembling Little's mechanism for polymers. Expressions have been found for Green's function and the F-function for vortex sections and energy gaps. Criteria for the development of superconductivity and an expression for the critical temperature have been obtained. A similar mechanism has also been investigated for alloying a metal with nonmetal. The author thanks V. Z. Kresin and A. I. Larkin for interesting discussions. Orig. art. has: 3 figures and 28 formulas. [Based on author's abstract] [NT]

SUB CODE: 20/ SUBM DATE: 04Dec65/ ORIG REF: 007/ OTH REF: 008/

Card 1/1 aum

GEILIKMAN, E. L.

Geilikman, E. L. "A Gas Survey in the Region of Shubar-Kudyk." Biulleten Neftianoi Geofiziki, Moscow-Leningrad, vol. 3, 1936, p. 153-158.

VEDENEYEV, M.K.; GEYLIKMAN, G.R.

Some design of automobile rear suspension and disc brakes. Avt.trakt.prom. no.6:25-27 Je '53. (MLRA 6:6)

(Automobiles--Design and construction)

[illegible]

Source: Referativnyy zhurnal. Khimiya, 1959, Nr 15, p [illegible] (USSR)

Author(s): Zabelot, F.S., Goykhman, Ye.L., Veznesenskaya, Ye.V.

Title: The Comparative Evaluation of the Methods for Determining the Color of Lubrication Oils With Various Colorimeters

Publication Data: Tr. [illegible], n.-i. in-t po pererabotke nefti i gaza i polucheniyu iskusstv. zhidk. topliv, 1958, Nr 7, pp 269 - 276

Abstract: A consideration of three devices used at the present time for determining the color of lubrication oils, the colorimeter KN-51, the photoelectric colorimeter FEKN-56 and the colorimeter UNION (NRA) which is broadly applied abroad, has shown that the latter is the most convenient. It permits to obtain well reproducible results of color determination, it is simple to handle and the analysis takes 1 - 2 min. The authors point to the necessity of developing a Soviet device of type NRA.

G. Margolina

[illegible]

LIPOVSKAYA, K.S.; VOZNESENSKAYA, Ye.V.; GEYLIKMAN, Ya.L.; GRYAZNOV, B.V.

Rapid method of determining oil content of paraffin. Trudy VNII NP no.7:352-358 '58. (MIRA 12:10)
(Paraffins) (Lubrication and lubricants)

GEYLUR, L.I., mayor meditsinskoy sluzhby; KHASIN, M.I.

Comparative rating of different methods for examining gastric secretion. Voen.-med.zhur. no.4:80 Ap '60. (MIRA 14:1)
(STOMACH--SECRETIONS)

GEYMAN, B.A.

YEPIFANIN, Nikolay Nikolayevich; KOMAROV, F.P., kandidat tekhnicheskikh nauk, retsenzent; SAPOTHITSKIY, S.A., kandidat tekhnicheskikh nauk, retsenzent; ROZENBERGER, N.A., kandidat tekhnicheskikh nauk, retsenzent; BLOSHTEYN, I.I., inzhener, retsenzent; GEYMAN, A.A., inzhener, retsentsent; ZAMORUYEV, B.M., inzhener, retsenzent; KLOPOV, V.M., redaktor; FEDOROV, V.M., redaktor izdatel'stva; KARASIK, N.P., tekhnicheskiy redaktor

[Technology of woodpulp] Tekhnologiia tselliulozy. Moskva, Goslesbumizdat. Vol.1. [Sulfite-cellulose manufacture] Proizvodstvo sul'fitnoi tselliulozy. 1956. 748 p. (MLRA 9:7)
(Woodpulp)

GEYMAN, Anatoliy Abramovich. Prinimali uchastiye: SAVINER, I.G., inzh.; ZAMORUYEV, B.M., inzh.; MAZARSKIY, S.M., inzh.; NOVIKOV, N.Ye., kand. tekhn. nauk, dots., red.; FILIMONOVA, A.I., red. izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Hoisting and conveying systems in the woodpulp, paper, and woodworking industries]Gruzopod"emnye i transportnye ustroistva v tsellyulozno-bumazhnoi i derevoobrabatyvaiushchei promyshlennosti. Moskva, Goslesbumizdat, 1962. 448 p. (MIRA 16:3)

(Woodpulp industry--Equipment and supplies)
(Woodworking industry--Equipment and supplies)
(Materials handling)

GONOROVSKIY, I.S.; GEYMAN, A.Ye., redaktor; SOKOLOVA, R.Ya., tekhnicheskiy redaktor.

[Radio signals and transient phenomena in radio circuits] Radiosignaly i perekhodnye iavleniia v radiotsepiakh. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1954. 325 p. (MLRA 7:12)
(Radio circuits)

SIFOROV, V.I.; GEYMAN, A.Ya., inzh.-mayor, red.; KUZ'MIN, I.F., tekhn. red.

[Radio receiving devices] Radiopriemnye ustroistva. Izd.4., perer. Moskva, Voen.izd-vo voen. M-va SSSR, 1951. 647 p. (MIRA 16:8)

(Radio--Receivers and reception)

GEYMAN, B. [Heiman, B.] (Riga); MUTSENIYEK, R. [Mucenieks, R.] (Riga)

Creators of automatic machinery. Nauka i zhizn' 27 no.9:47-50 S '60. (MIRA 13:9)
(Latvia--Automatic control)

GEYMAN, B.M.

Geological interpretation of gravity anomalies in western Uzbekistan. Geol. nefti i gaza vol. 4, no. 4:21-22 Ap '61. (MIRA 14:5)

1. Vostochnaya geofizicheskaya ekspeditsiya No.3, Upravleniye geologii i okhrany nedr pri Sovete Ministrov Turkmenskoy SSR.
(Uzbekistan—Gravity)

GEYMAN, B.M.

Use of the gravimetric method in searching for structures in the sedimentary cover. Izv. AN Turk. SSR.Ser. fiz.-tekh., khim. i geol. nauk no.4:21-25 '63. (MIRA 17:2)

1. Otdel razvedochnoy geofiziki i seysmologii AN Turkmenskoy SSR.

ACCESSION NR: AP4014861 S/0202/63/000/006/0036/0041

AUTHORS: Capeyev, V. V.; Geyman, B. M.

TITLE: Special methods in the application of gravity and seismic exploration in southeastern Kara Kum

SOURCE: AN TurkmSSR. Izv. Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, no. 6, 1963, 36-41

TOPIC TAGS: gravity survey, seismic survey, temperature factor, heat factor, zero point, nonlinear behavior

ABSTRACT: Difficulties in accurate gravity surveying in southeastern Kara Kum involve terrain problems in the desert region, sharp changes in temperature, and other factors. The principal steady noise in gravity surveying is nonlinear, perhaps changing in sign. This undesirable property is due primarily to blasts of heat, which subject the instrument to wide and, frequently, dangerous changes in temperature. These changes are especially bad during the summer months. Corrections for this nonlinear behavior of the zero point cannot always be made accurately by use of a second (control) gravimeter, which is subjected to the same

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ACCESSION NR: AP4014861

sharp temperature changes. Erractic results are commonly obtained. Linear variations are possible only when the temperature changes are uniform and unidirectional, during certain intervals of the day. It is necessary to select such intervals, when temperature changes are rather constant, and to work only during these times. Operation at night has proved to be especially useful because of the slower rate of temperature change, and this is particularly true for the summer months. The seismic technique employed depends on both surface conditions and rock properties at depth. Subsurface conditions are generally satisfactory in this part of Kara Kum, several good reflecting horizons commonly being present, and two marker horizons being almost everywhere discernible. But surface difficulties are encountered in areas of barchan dunes and other forms of shifting sand. Velocity values are irregular in sand, and the absorption of energy is excessive. Experiments have shown that proper grouping of detectors in special arrays gives reliable seismic data. Tests were made with arrays of 11 detectors arranged on a base of 45, 60, 75, 100, and 125 m, with distances between group centers of 30, 20, and 10 m. Best results were obtained for arrays on the longer base (100 m). A number of faults and platform-type structures have been delineated with this technique. The authors believe the refinements they propose are to be recommended for gravity and seismic surveys in sandy desert regions. Orig. art. has: 1 figure.

Card 2/3

ACCESSION NR: AP4011861

ASSOCIATION: Otdel geofiziki i seysmologii AN Turkmenskoy SSR (Department of Geophysics and Seismology AN Turkmen SSR)

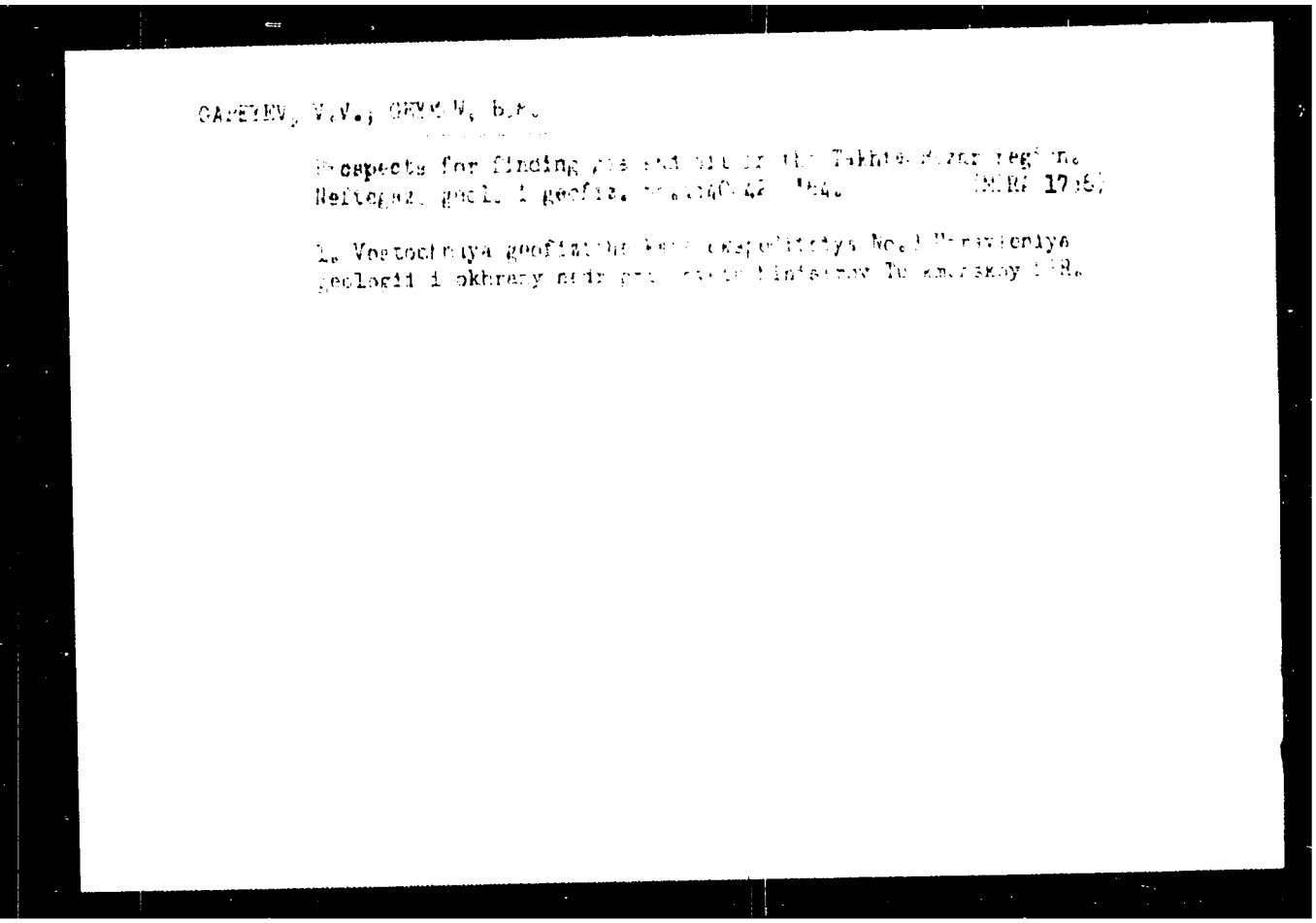
SUBMITTED: 02Feb63	DATE ACQ: 19Feb64	ENCL: 00
SUB CODE: AS	NO REF SOV: 000	OTHER: 000

Card 3/3

GAPEYEV, V.V.; GEYMAN, B.M.

Geophysics in studying the tectonics of the Repetek salt domes.
Sov. geol. 6 no.10:97-102 O '63. (MIRA 17:1)

1. Vostochnaya geofizicheskaya ekspeditsiya Upravleniya geologii i okhrany nedr pri Sovete Ministrov Turkmenskoy SSR.



GAFEIEV, V.V.; GEVA, V. b.r.

Prospects for finding [illegible] in the Takhta-Kuzar region.
Neftegaz. geol. i geofiz. [illegible] 1964. (MIRA 17:6)

1. Vostochnaya geofizicheskaya kontora ekspeditsiya No. 1 Neftyanoy geologii i okhrany nedr pri [illegible] Turkmenskoy SSR.

AMIKINA, T.I., dots.; BOGUSLAVSKAYA, T.B., ass.; BOMASH, Yu.M., dots.; GEYMAN, D.V., ass.; GRENADEROV, Yu.V., ass.; DOBROVA, K.B., ass.; KLEPIKOV, V.A., ass.; ZURRILOVA, A.V., ass.; KULIK, V.P., mlad. nauchn. sotr.; NIKOLAYEV, F.D., dots. [deceased]; SYCHENIKOV, I.A., dots.; TRAVIN, A.A., ispoln. obyazannosti prof.; RYBALKIN, P.Ye., ass.; KOVANOV, V.V., prof., red.; PROKOF'YEV, V.P., red.; ZAGOREL'SKIY, Ya.I., tekhn. red.

[Special methodology for practical work in topographic anatomy and operative surgery] Chastnaia metodika prakticheskikh zaniatii po topograficheskoi anatomii i operativnoi khirurgii. 1zd.2., perer. i dop. Pod red. V.V.Kovanova. Moskva, 1963. 224 p. (MIRA 16:12)

1. Moscow. Pervyy meditsinskiy institut. 2. Kollektiv prepodavateley kafedry operativnoy khirurgii i topograficheskoy anatomii 1-go Moskovskogo instituta imeni I.M.Sechenova (for all except Prokof'yev, Zagorel'skiy). 3. Zaveduyushchiy kafedroy operativnoy khirurgii i topograficheskoy anatomii 1-go Moskovskogo instituta imeni I.M.Sechenova , chlena-korrespondent AMN SSSR (for Kovanov).
(ANATOMY, SURGICAL AND TOPOGRAPHICAL)
(SURGERY, OPERATIVE)

KOVANOV, Vladimir Vasil'yevich; prof.; BOMASH, Yuliy Maksimovich, dots.; BOGUSLOVSKAYA, T.B., kand.med.nauk; GEYMAN, D.V., kand.med.nauk; ZUBRILOVA, A.V., kand.med.nauk; LEONOV, S.V., kand.med.nauk; NIKOLAYEV, F.D., dots. [deceased]; VAVILOV, G.S., kand.med.nauk, nauchn.red.

[Practical manual on topographical anatomy] Prakticheskoe rukovodstvo po topograficheskoi anatomii; dlia studentov i vrachei. Moskva, Izd-vo "Meditsina," 1964. 388 p. (MIRA 17:3)

1. Prepodavateli kafedry operativnoy khirurgii i topograficheskoy anatomii Pervogo Moskovskogo meditsinskogo instituta imeni I.M.Sechenova (for Boguslavskaya, Geyman, Zubrilova, Leonov). 2. Deystvitel'nyy chlen AMN SSSR (for Kovanov).

*

BURLAKOV, B.S., inzh.; GEYMAN, D.Ya., inzh.; GRZHIBOVSKIY, V.V., inzh.; GUSEV, Yu.S., inzh.; YEFIMOV, V.Ye., inzh.; ZHURAVSKAYA, G.Ya., inzh.; KAGAN, V.G., inzh.; MALYSHEV, A.I., inzh.; PODREZOV, V.M., inzh.; SAPIRSHTEYN, V.E., inzh.; SHKARIN, Yu.P., inzh.; IGLITSYN, I.L., red.; LARIONOV, G.Ye., tekhn.red.

[Adjustment of high-frequency communication and remote control channels utilizing electric power transmission lines] Naladka vysokochastotnykh kanalov sviazi i telemekhaniki po provodam linii elektroperedachi. Moskva, Gos.energ.izd-vo, 1958. 236 p. (MIRA 13:10)

1. Russia (1923- U.S.S.R.) Ministerstvo elektrostantsii. Tekhnicheskoye upravleniye.

(Remote control) (Telecommunication)

GEYMAN, D.Ya.

Devices for investigating power networks used in high-frequency communications. Sbor.mat.po avtom.poriav.prots.i disp. no.5: 101-114 '60. (MIRA 14:4)

1. Konstruktorskoye byuro "TSvetmetavtomatika."
(Electric controllers) (Telecommunication)

GEYMAN, I. B.

Compound catalysts for [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] Instead of tragacanth, starch, or similar substances [illegible] used for cementing a mixt. of oxides which are employed to [illegible] the synthesis of [illegible], one of the oxides is used. It is introduced into the mixt. [illegible]. The oxide cement does not [illegible], at the reaction temp. [illegible] the catalytic elements. M. [illegible]

GEYMAN, I. I.

Geyman, I. I. - "Voltage stabilizer," Trudy VNIIM (Vsesoyuz. nauch. - issled. in-t metrologii im. Mendeleyeva), 1949, Issue 6, p. 75-95

SO: U-5240, 17, Dec. 53, (Letopis 'Zhurnal 'nykh Statey, No. 25, 1949).